EARLY HAZARD RANKING SYSTEM SITE

NO REFERENCES AVAILABLE

X2234

RCRA/NPL POL QUESTIONNAIRE FOR INITIAL SCI IING

Site Name Lee's Lane Landfill 2104

City Louisville State KY

Facility I.D. Number KYD980552052

Type of Facility: Generator____ Transporter____ TSD____ NA

I. RCRA APPLICABILITY	yes	no
Does the facility have RCRA interim status?	___	X
Did the facility ever have RCRA interim status?	___	X
Does the facility have a final or post-closure permit? If so, date issued _____	___	X
Is the facility a non-notifier that has been identified by States or EPA?	___	X
Is the facility a known or possible protective filer?	___	X

STOP HERE IF ALL ANSWERS TO QUESTIONS IN SECTION I ARE NO

II. FINANCIAL STATUS		
Is the facility owned by an entity that has filed for bankruptcy under federal laws (Chapter 7 or 11) or State laws?	___	___

If yes, what has it filed under?
Chapter 7___ Chapter 11___ Other___

III. ENFORCEMENT		
RCRA Status		
Has the facility lost authorization to operate via LOIS, 3005(c) permit denial, 3008(h) IS termination, 3005(d) permit revocation?	___	___
Has the facility's Interim Status been terminated via another mechanism (i.e. administrative termination)?		

CERCLA Status

What CERCLA financed remedial or removal activities have been initiated at the site? (RI/FS, RD/RA, O&M, forward planning, and removal; does not include enforcement or PA/SI activities)

Enforcement Status

	YES	NO
In general, would you characterize the facility as demonstrating an unwillingness to undertake corrective action based on prior State, CERCLA or RCRA actions?	____	____

If yes, please describe and cite the authorities exercised.

Is the owner/operator a party to any enforcement action at the site?	____	____

If not, why not?

Are any PRPs (including owner/operators) undertaking remedial studies or action in response to CERCLA enforcement authorities? What is the extent/type of work that has been completed (RI/FS, etc.) and who (generators, owner/operator, etc.) is conducting the work?

KEN00188

LEE'S LANE LANDFILL

Lousiville, Kentucky

Lee's Lane Landfill is a 125-acre tract along the Ohio River flood plain in Louisville, Jefferson County, Kentucky. It first received waste in 1948 from domestic, commericial, and industrial sources. Prior to and while the wastes were received, the site was a sand and gravel quarry. In March 1975, home onwers in Riverside Gardens, a community adjacent to the site, reported flash fires around their water heaters. After explosive levels of methane gas were detected, seven families were evacuated from their homes near the site. In April 1975, the landfill was closed.

Studies conducted by county, State, and Federal agencies documented the presence of methane and other toxic gases in the subsurface east of the site. In 1978, an extensive monitoring program was conducted to define the gas migration problem. A gas venting system was finally installed in October 1980 which, according to the Jefferson County Works Department, is operating satisfactorily.

A more recent problem associated with this site is the discovery in February 1980 of approximately 400 exposed drums of hazardous materials on the Ohio River bank adjacent to the landfill. Over 50 compounds were identified by chemical analysis. They included phenolic resins, benzene, and relatively high concentrations of copper, cadium, nickel, lead and chromium. Flash points were determined to be as low as 75°F. In October 1981, the liquid wastes were pumped from the drums and taken to an approved disposal facility. The empty drums, as well as solid wastes, were removed from the river bank and buried on site.

Groundwater wells have been drilled under the direction of the State to monitor the water table under the site. These wells were not developed properly and therefore have limited use. Additional monitor wells are needed to properly assess the groundwater contamination at the landfill.

This site was on the Interim Priority List of 160 sites.

Facility name: Lee's Lane Landfill

Location: Louisville, Kentucky

EPA Region: Region IV - Atlanta

Person(s) in charge of the facility:

Name of Reviewer: Date:

General description of the facility:

(For example: landfill, surface impoundment, pile, container; types of hazardous substances; location of the facility; contamination route of major concern; types of information needed for rating; agency action, etc.)

Scores: $S_M = 37.52$ $S_{gw} = 38.78$ $S_{sw} = 0.18$ $S_a = 55.38$

$S_{FE} = NR$

$S_{DC} = NR$

FIGURE 1
HRS COVER SHEET

Ground Water Route Work Sheet					
Rating Factor	Assigned Value (Circle One)	Multi-plier	Score	Max. Score	Ref. (Section)
1 Observed Release	0 (45)	1	45	45	3.1
If observed release is given a score of 45, proceed to line 4. If observed release is given a score of 0, proceed to line 2.					
2 Route Characteristics					3.2
Depth to Aquifer of Concern	0 1 2 3	2		6	
Net Precipitation	0 1 2 3	1		3	
Permeability of the Unsaturated Zone	0 1 2 3	1		3	
Physical State	0 1 2 3	1		3	
Total Route Characteristics Score				15	
3 Containment	0 1 2 3	1		3	3.3
4 Waste Characteristics					3.4
Toxicity/Persistence	0 3 6 9 12 15 (18)	1	18	18	
Hazardous Waste Quantity	0 1 2 3 4 5 6 7 (8)	1	8	8	
Total Waste Characteristics Score			26	26	
5 Targets					3.5
Ground Water Use	0 1 2 (3)	3	9	9	
Distance to Nearest Well/Population Served	0 4 6 8 (10) 12 16 18 20 24 30 32 35 40	1	10	40	
Total Targets Score			19	49	
6 If line 1 is 45, multiply 1 x 4 x 5. If line 1 is 0, multiply 2 x 3 x 4 x 5			22,230	57,330	
7 Divide line 6 by 57,330 and multiply by 100			S_{gw} = 38.78		

FIGURE 2
GROUND WATER ROUTE WORK SHEET

Surface Water Route Work Sheet

	Rating Factor	Assigned Value (Circle One)	Multiplier	Score	Max. Score	Ref. (Section)
1	Observed Release	(0) 45	1	0	45	4.1
	If observed release is given a value of 45, proceed to line 4. If observed release is given a value of 0, proceed to line 2.					
2	Route Characteristics					4.2
	Facility Slope and Intervening Terrain	0 1 2 (3)	1	3	3	
	1-yr. 24-hr. Rainfall	0 1 (2) 3	1	2	3	
	Distance to Nearest Surface Water	0 1 2 (3)	2	6	6	
	Physical State	0 1 2 (3)	1	3	3	
	Total Route Characteristics Score			14	15	
3	Containment	0 1 2 (3)	1	3	3	4.3
4	Waste Characteristics					4.4
	Toxicity/Persistence	0 3 6 9 12 15 (18)	1	18	18	
	Hazardous Waste Quantity	0 1 2 3 4 5 6 7 (8)	1	8	8	
	Total Waste Characteristics Score			26	26	
5	Targets					4.5
	Surface Water Use	0 1 (2) 3	3	6	9	
	Distance to a Sensitive Environment	(0) 1 2 3	2	0	6	
	Population Served/Distance to Water Intake Downstream	(0) 4 6 8 10 12 16 18 20 24 30 32 35 40	1	0	40	
	Total Targets Score			6	55	
6	If line 1 is 45, multiply 1 x 4 x 5. If line 1 is 0, multiply 2 x 3 x 4 x 5			6552	64,350	
7	Divide line 6 by 64,350 and multiply by 100		S_{sw} =	10.18		

FIGURE 7
SURFACE WATER ROUTE WORK SHEET

Air Route Work Sheet

Rating Factor	Assigned Value (Circle One)	Multiplier	Score	Max. Score	Ref. (Section)
[1] Observed Release	0 (45)	1	45	45	5.1
Date and Location:	March 1995 - On-site gas monitoring wells				
Sampling Protocol:	Standard Methods per Federal Register				
If line [1] is 0, the S_a = 0. Enter on line [5]. If line [1] is 45, then proceed to line [2].					
[2] Waste Characteristics					5.2
Reactivity and Incompatibility	0 (1) 2 3	1	1	3	
Toxicity	0 1 2 (3)	3	9	9	
Hazardous Waste Quantity	0 1 2 3 4 5 6 7 (8)	1	8	8	
	Total Waste Characteristics Score		18	20	
[3] Targets					5.3
Population Within 4-Mile Radius	0 9 12 15 18 (21) 24 27 30	1	21	30	
Distance to Sensitive Environment	(0) 1 2 3	2	0	6	
Land Use	0 1 2 (3)	(1)	3	3	
	Total Targets Score		24	39	
[4] Multiply [1] x [2] x [3]			19,440	35,100	
[5] Divide line [4] by 35,100 and multiply by 100		S_a =	55.38		

FIGURE 9
AIR ROUTE WORK SHEET

	S	S^2
Groundwater Route Score (S_{gw})	38.78	1503.89
Surface Water Route Score (S_{sw})	10.18	103.63
Air Route Score (S_a)	55.38	3066.94
$S_{gw}^2 + S_{sw}^2 + S_a^2$		4674.46
$\sqrt{S_{gw}^2 + S_{sw}^2 + S_a^2}$		68.37
$\sqrt{S_{gw}^2 + S_{sw}^2 + S_a^2} / 1.73 = S_M =$		39.52

FIGURE 10
WORKSHEET FOR COMPUTING S_M

Fire and Explosion Work Sheet						
Rating Factor	Assigned Value (Circle One)	Multi-plier	Score	Max. Score	Ref. (Section)	
1 Containment	1 3	1		3	7.1	
2 Waste Characteristics					7.2	
Direct Evidence	0 3	1		3		
Ignitability	0 1 2 3	1		3		
Reactivity	0 1 2 3	1		3		
Incompatibility	0 1 2 3	1		3		
Hazardous Waste Quantity	0 1 2 3 4 5 6 7 8	1		8		
Total Waste Characteristics Score				20		
3 Targets					7.3	
Distance to Nearest Population	0 1 2 3 4 5	1		5		
Distance to Nearest Building	0 1 2 3	1		3		
Distance to Sensitive Environment	0 1 2 3	1		3		
Land Use	0 1 2 3	1		3		
Population Within 2-Mile Radius	0 1 2 3 4 5	1		5		
Buildings Within 2-Mile Radius	0 1 2 3 4 5	1		5		
Total Targets Score				24		
4 Multiply 1 x 2 x 3				1,440		
5 Divide line 4 by 1,440 and multiply by 100		S_{FE} =				

FIGURE 11
FIRE AND EXPLOSION WORK SHEET

Direct Contact Work Sheet					
Rating Factor	Assigned Value (Circle One)	Multiplier	Score	Max. Score	Ref. (Section)
1 Observed Incident	0 45	1		45	8.1
If line 1 is 45, proceed to line 4 If line 1 is 0, proceed to line 2					
2 Accessibility	0 1 2 3	1		3	8.2
3 Containment	0 15	1		15	8.3
4 Waste Characteristics Toxicity	0 1 2 3	5		15	8.4
5 Targets					8.5
Population Within a 1-Mile Radius	0 1 2 3 4 5	4		20	
Distance to a Critical Habitat	0 1 2 3	4		12	
Total Targets Score				32	
6 If line 1 is 45, multiply 1 x 4 x 5 If line 1 is 0, multiply 2 x 3 x 4 x 5				21,600	
7 Divide line 6 by 21,600 and multiply by 100		S_{OC} =			

FIGURE 12
DIRECT CONTACT WORK SHEET

June 28, 1982

DOCUMENTATION RECORDS
FOR
HAZARD RANKING SYSTEM

INSTRUCTIONS: The purpose of these records is to provide a convenient way to prepare an auditable record of the data and documentation used to apply the Hazard Ranking System to a given facility. As briefly as possible summarize the information you used to assign the score for each factor (e.g., "Waste quantity = 4,230 drums plus 800 cubic yards of sludges"). The source of information should be provided for each entry and should be a bibliographic-type reference that will make the document used for a given data point easier to find. Include the location of the document and consider appending a copy of the relevant page(s) for ease in review.

FACILITY NAME: Lee's Lane Landfill

LOCATION: Louisville, Kentucky

GROUND WATER ROUTE

1 OBSERVED RELEASE

Contaminants detected (5 maximum):

Trichlorofluoromethane
Dichlorodifluoromethane
Phenol
Chromium
Arsenic

Rationale for attributing the contaminants to the facility:

Compounds detected in on site monitoring wells.

* * *

2 ROUTE CHARACTERISTICS

Depth to Aquifer of Concern

Name/description of aquifers(s) of concern:

Depth(s) from the ground surface to the highest seasonal level of the saturated zone [water table(s)] of the aquifer of concern:

Depth from the ground surface to the lowest point of waste disposal/ storage:

Net Precipitation

Mean annual or seasonal precipitation (list months for seasonal):

Mean annual lake or seasonal evaporation (list months for seasonal):

Net precipitation (subtract the above figures):

Permeability of Unsaturated Zone

Soil type in unsaturated zone:

Permeability associated with soil type:

Physical State

Physical state of substances at time of disposal (or at present time for generated gases):

* * *

3 CONTAINMENT

Containment

Method(s) of waste or leachate containment evaluated:

Method with highest score:

4 WASTE CHARACTERISTICS

Toxicity and Persistence

Compound(s) evaluated:
Chromium
Arsenic
Phenol

Compound with highest score:

Chromium

Hazardous Waste Quantity

Total quantity of hazardous substances at the facility, excluding those with a containment score of 0 (Give a reasonable estimate even if quantity is above maximum):

~~11,231 tons~~ *196,800 tons
~~47,000 gallons~~ ** 400+ 55-gallon drums

Basis of estimating and/or computing waste quantity:

* Eckhardt Report - Sept 1979
** State inventory during removal operations

* * *

5 TARGETS

Ground Water Use

Use(s) of aquifer(s) of concern within a 3-mile radius of the facility:

Drinking water - Municipal supply lines do not run to all houses @ close to the flood wall.

Distance to Nearest Well

Location of nearest well drawing from aquifer of concern or occupied building not served by a public water supply:

East of Landfill - S+A Div. November / December, 1978 field investigation.

Distance to above well or building:

> 1000 ft

Population Served by Ground Water Wells Within a 3-Mile Radius

Identified water-supply well(s) drawing from aquifer(s) of concern within a 3-mile radius and populations served by each:

S+A Div. 1978 sampling investigation

Computation of land area irrigated by supply well(s) drawing from aquifer(s) of concern within a 3-mile radius, and conversion to population (1.5 people per acre):

N/A

Total population served by ground water within a 3-mile radius:

0.8 - Calculated from 16 houses (sampled in 1978) X 3.8 people/house

SURFACE WATER ROUTE

1 OBSERVED RELEASE

Contaminants detected in surface water at the facility or downhill from it (5 maximum):

No

Rationale for attributing the contaminants to the facility:

* * *

2 ROUTE CHARACTERISTICS

Facility Slope and Intervening Terrain

Average slope of facility in percent:

12-20%

Name/description of nearest downslope surface water:

Ohio River

Average slope of terrain between facility and above-cited surface water body in percent:

16%

Is the facility located either totally or partially in surface water?

Is the facility completely surrounded by areas of higher elevation?

yes

1-Year 24-Hour Rainfall in Inches

2.75 inches

Distance to Nearest Downslope Surface Water

< 100 ft

Physical State of Waste

Liquid - 55 gallon drums sampled by state

* * *

3 CONTAINMENT

Containment

Method(s) of waste or leachate containment evaluated:

Landfill

Method with highest score:

Landfill - site is on the bank of the Ohio River
No liner present or leachate diversion
~~Soil~~ part of the site is in the 10yr flood plain

4 WASTE CHARACTERISTICS

Toxicity and Persistence

Compound(s) evaluated

Chromium phenol
Benzene
Cadmium

Compound with highest score:

Chromium

Hazardous Waste Quantity

Total quantity of hazardous substances at the facility, excluding those with a containment score of 0 (Give a reasonable estimate even if quantity is above maximum):

See ground water route

Basis of estimating and/or computing waste quantity:

See ground water route

* * *

5 TARGETS

Surface Water Use

Use(s) of surface water within 3 miles downstream of the hazardous substance:

Recreational

Is there tidal influence?

NO

Distance to a Sensitive Environment

Distance to 5-acre (minimum) coastal wetland, if 2 miles or less:

N/A

Distance to 5-acre (minimum) fresh-water wetland, if 1 mile or less:

N/A

Distance to critical habitat of an endangered species or national wildlife refuge, if 1 mile or less:

N/A

Population Served by Surface Water

Location(s) of water-supply intake(s) within 3 miles (free-flowing bodies) or 1 mile (static water bodies) downstream of the hazardous substance and population served by each intake:

None

Computation of land area irrigated by above-cited intake(s) and conversion to population (1.5 people per acre):

N/A

Total population served:

N/A

Name/description of nearest of above water bodies:

N/A

Distance to above-cited intakes, measured in stream miles.

N/A

AIR ROUTE

1 OBSERVED RELEASE

Contaminants detected:

Heptane
Methane
Vinyl Chloride
butadiene
dichloroethane
benzene
ethyl benzene

Date and location of detection of contaminants

March 1975 - On site gas monitoring wells

Methods used to detect the contaminants:

~~GC~~

Gas Chromatograph / Mass Spectometer Scan

Rationale for attributing the contaminants to the site:

On site wells were sampled

* * *

2 WASTE CHARACTERISTICS

Reactivity and Incompatibility

Most reactive compound:

Vinyl Chlaide - NFPA rating of 1.

Most incompatible pair of compounds:

None Known

Toxicity

Most toxic compound:

Vinyl Chloride

Hazardous Waste Quantity

Total quantity of hazardous waste:

See ground water route

Basis of estimating and/or computing waste quantity:

see ground water route

* * *

3 TARGETS

Population Within 4-Mile Radius

Circle radius used, give population, and indicate how determined:

0 to 4 mi 0 to 1 mi 0 to 1/2 mi 0 to 1/4 mi

Distance to a Sensitive Environment

Distance to 5-acre (minimum) coastal wetland, if 2 miles or less:

Distance to 5-acre (minimum) fresh-water wetland, if 1 mile or less:

Distance to critical habitat of an endangered species, if 1 mile or less:

Land Use

Distance to commercial/industrial area, if 1 mile or less:

Distance to national or state park, forest, or wildlife reserve, if 2 miles or less:

Distance to residential area, if 2 miles or less:

Distance to agricultural land in production within past 5 years, if 1 mile or less:

Distance to prime agricultural land in production within past 5 years, if 2 miles or less:

Is a historic or landmark site (National Register or Historic Places and National Natural Landmarks) within the view of the site?